



(REVIEW ARTICLE)



Relationship between maternal age and the incidence of Low Birth Weight (LBW): A literature review

Anita Rachmawati * and Lisnah Hidayah

Midwifery Study Program, Faculty of Medicine, Airlangga University Surabaya, Indonesia.

World Journal of Advanced Research and Reviews, 2024, 21(01), 2366–2369

Publication history: Received on 28 November 2023; revised on 10 January 2024; accepted on 12 January 2024

Article DOI: <https://doi.org/10.30574/wjarr.2024.21.1.2695>

Abstract

The definition of Low Birth Weight (LBW) according to WHO (World Health Organization) is a body weight at birth of less than 2500 grams. According to WHO, the prevalence of LBW is more than 15.5% of infant births each year. The purpose of this study was to determine the relationship between maternal age and the incidence of LBW. This study used the literature review method. Data for this study were sourced from national scientific journal articles obtained through Garuda kemendikbud, Google Scholar, and other national journals. This study found no significant association between maternal age and LBW, so it is expected that health workers increase monitoring and counseling to mothers with other risk factors.

Keywords: Maternal Age; LBW; Pregnant Women; Relationship

1. Introduction

The definition of Low Birth Weight (LBW) according to WHO (World Health Organization) is a body weight at birth of less than 2500 grams. According to WHO, the prevalence of LBW is more than 15.5% of infant births each year. Infants who have Low Birth Weight (LBW) are a very complex and complicated problem because it contributes to poor health which can cause death (6) . Infant Mortality Rate (IMR) is one of the important indicators in determining the level of public health. Infant Mortality Rate (IMR) is the number of infant deaths within the first 28 days of life per 1000 live births. LBW is one of the main factors in increasing mortality in infants (5) . The causes of LBW include maternal factors, fetal factors and environmental factors. One example of maternal factors is the age of the mother (6) . Pregnancy at the age of less than 20 years is a high-risk pregnancy because the reproductive system has not functioned optimally and perfectly so that it can interfere with the process of delivering nutrients from mother to fetus. Pregnancies over 35 years of age are at high risk due to health problems and chronic diseases. The decline in the function of reproductive organs can cause complications and complication of labor (3) . As a second example The high risk age of giving birth to a low birth weight baby is less than 20 years and more than 35 years. Pregnant women less than 20 years of age have suboptimal reproductive organs, physiological functions, emotions and psychological functions and immature psychology to respond to pregnancy, causing various pregnancy complications. Pregnant women aged more than 35 years have a risk of giving birth to LBW because the mother is at risk of experiencing pregnancy complications such as hypertension in pregnancy, degenerative diseases, weak uterine contractions and pelvic bone abnormalities (7) .

2. Material and methods

This study used the literature review method. The data for this study were sourced from national scientific journal articles obtained through Garuda kemendikbud, Google Scholar, and other national journals using the keywords "Maternal Age", "Low Birth Weight", "Pregnant Women", and "Relationship". The inclusion criteria for this study were titles that were in accordance with the research theme, namely the relationship between maternal age and parity with

* Corresponding author: Anita Rachmawati

the incidence of low birth weight (LBW) published in 2018 to 2023 (the last five years). Relevant research articles were identified using the literature review method, namely by comparing similar articles in the research specifically related to maternal age and parity with the incidence of low birth weight (LBW).

3. Results and discussion

Based on the collected and analyzed articles, the findings are presented as follows:

Table 1 List of Articles

No.	Author	Research Title	Method	Result
1.	Handayani et al	The relationship between maternal age and parity with the incidence of lbw in the wates health center area, kulon progo district.	This study is an analytic study with a case control approach, which is an approach with a retrospective study.	Based on the results of bivariate analysis (chi square) the age at risk of giving birth to LBW was 20%. Maternal age obtained P value $0.310 < 0.05$. So that maternal age has no relationship with LBW (2)
2.	Sari & Wahyuni	The association of maternal age with the incidence of low birth weight (lbw)	This study is an analytic survey study conducted to determine the relationship between maternal age and the incidence of low birth weight by looking at patient registration documentation.	Based on the results of the analysis (chi square) the age at risk of giving birth to LBW was 10%, and calculated manually it was decided that $X^2 \text{ Count} > X^2 \text{ Table}$ then (H_0) was rejected and (H_a) was accepted. So that maternal age has a relationship with LBW (6)
3.	Angga Arsesiana	Analysis of the relationship between maternal age and spacing of pregnancies with the incidence of low birth weight (lbw) at panembahan senopati hospital, bantul.	This study is an observational analytic study with a case control approach with random sampling technique.	Based on the results of the analysis (chi square) the age at risk of giving birth to LBW was 30.9%. Maternal age obtained P value $0.030 > 0.05$. So that maternal age has a relationship with LBW (1)
4.	Putri Susanto & Darto	The Relationship Between Anemia and Maternal Age and the Incidence of Low Birth Weight Infants at Labuang Baji Hospital Makassar 2019	This study used an analytic method with a Cross Sectional Study approach to determine the relationship of anemia and maternal age to the incidence of LBW.	Based on the results of the analysis (chi square) the age at risk of giving birth to LBW was 38.5%. Maternal age obtained P value $0.013 > 0.05$. So that there is a relationship between maternal age and LBW (5)
5.	Heriani & Camelia	The relationship between maternal age and parity with the incidence of low birth weight	This study used an analytic survey with a cross-sectional approach.	Based on the results of the analysis (chi square) the age of mothers at risk who gave birth to LBW was 62.5%. Maternal age obtained P value $0.001 > 0.05$. So there is a relationship between maternal age and LBW (3)
6.	Liznindya	The relationship between the age of pregnant women and the incidence of low birth weight babies (bllr) in serangmekar village ciparay kab. Bandung 2021	This study is an analytic observational study with a cross sectional approach	Based on the results of the analysis (chi square) the age of mothers at risk who gave birth to LBW was 26.32%. Maternal age obtained P value $0.002 > 0.05$. So that there is a significant relationship between maternal age and LBW (4)

Age has an influence on pregnancy and maternal labor. According to Efendi and Makhfudli (2009) who revealed in general, a woman is said to be physically ready if she has completed the growth of her body, which is around the age of 20 years so that the age of 20 years can be used as a guideline for physical readiness and the ideal age of pregnancy is in the age range of 20-35 years (2). The optimal reproductive age for a woman is between 21-35 years of age, because under the age of 20 years the development of reproductive organs is not optimal, emotional and psychological maturity is lacking and physiological functions are not optimal, otherwise at the age of over 35 years there has been a decline in physiological and reproductive functions in general which results in the process of fetal development not being optimal (7). Pregnancy at the age of <20/>35 years tends to cause less fulfillment of adequate nutritional intake for fetal growth so that it can result in low birth weight babies (1). At the age of <20 years is an unhealthy reproductive age both physically and psychologically, physically the condition of the uterus and pelvis is not well developed so that mothers who become pregnant at that age experience difficulties in childbirth, especially the condition of the uterus which is still young can cause untimely labor. Whereas in mothers with age >35 years labor with LBW can occur because the function of reproductive organs begins to decline such as uterine function which can cause early labor (5). Pregnancy at the age of less than 20 years is a high-risk pregnancy because the reproductive system has not functioned optimally and perfectly, so it can interfere with the process of delivering nutrients from mother to fetus. Pregnancy over 35 years of age is high risk due to health problems and chronic diseases. The decline in the function of reproductive organs can cause complications and complication of labor (3). According to (Sulistyorini & Putri, 2015) one of the factors that influence the occurrence of LBW is the age of the mother. Pregnancy at a young age is a risk factor because the reproductive organs are immature and not ready to be fertilized (Pregnant) so that it can harm the health of the mother and inhibit the development and growth of the unborn child. Pregnancy in old age is very influential on the mother's condition because at this age the mother's health has begun to decline, if the mother's condition decreases this will also affect the unborn child (4)

4. Conclusion

The definition of Low Birth Weight (LBW) according to WHO (World Health Organization) is a body weight at birth of less than 2500 grams. LBW is one of the main factors in increasing mortality in infants. The causes of LBW include maternal factors, fetal factors and environmental factors. One example of maternal factors is maternal age. In a number of studies, LBW has been associated with both low and high risk maternal age. This study shows that LBW is related to maternal age.

Compliance with ethical standards

Acknowledgements

This article did not receive assistance from the government, private companies, or non-profit organization.

Disclosure of conflict of interest

No conflict of interest to be disclosed.

References

- [1] Angga Arsesiana. (2021). Analysis of the Relationship between Maternal Age and Pregnancy Spacing with the Incidence of Low Birth Weight Babies (Bblr) at Rs Panembahan Senopati Bantul. *Jurnal Kebidanan*, 11(1), 592-597. https://doi.org/10.33486/jurnal_kebidanan.v11i1.136
- [2] Handayani, F., Fitriani, H., & Lestari, C. I. (2019). The Relationship between Maternal Age and Parity with the Incidence of Bblr in the Wates Health Center Area, Kulon Progo Regency. *Midwifery Journal: Journal of Midwifery UM. Mataram*, 4(2), 67. <https://doi.org/10.31764/mj.v4i2.808>
- [3] Heriani, H., & Camelia, R. (2022). The Relationship of Maternal Age and Parity with the Incidence of Low Birth Weight. *Babul Ilmi Multi Science Health Scientific Journal*, 14(1), 116-122. <https://doi.org/10.36729/bi.v14i1.818>
- [4] Liznindya, L. (2023). The Relationship between the Age of Pregnant Women and the Incidence of Low Birth Weight Infants (LBW) in Serangmekar Ciparay Village, Bandung Regency in 2021. *Cerdika: Indonesian Scientific Journal*, 3(1), 1-5. <https://doi.org/10.59141/cerdika.v3i1.516>

- [5] Putri Susanto, Y., & Darto, J. (2020). The Relationship Between Anemia and Maternal Age and the Incidence of Low Birth Weight Infants at Labuang Baji Hospital Makassar 2019. *Delima Pelamonia Health Journal*, 3(2), 124-129. <https://doi.org/10.37337/jkdp.v3i2.106>
- [6] Rahmadani, D., Noflidaputri, R., & Delvina, V. (2022). Analysis of Factors Causing LBW Incidence in the Working Area of the Solok City Health Office Received: 04-06-2022 Revised: 07-06-2022 Accepted: 25-06-2022 INTRODUCTION LBW is a baby with a birth weight of less than 2500 grams regardless of the gestation period. *Weight l.* 2(6), 656-667.
- [7] Sari, A. K., & Wahyuni, S. (2021). The Relationship between Maternal Age and the Incidence of Low Birth Weight Infants (LBW). *Midwifery Journal*, 1(3), 131-134.